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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,237	07/23/2003	Shigeru Taniguchi	JCLA11628	1279
23900	7590	09/28/2005	EXAMINER	
J C PATENTS, INC. 4 VENTURE, SUITE 250 IRVINE, CA 92618			MCDONALD, RODNEY GLENN	
			ART UNIT	PAPER NUMBER
			1753	

DATE MAILED: 09/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/626,237	Applicant(s) TANIGUCHI ET AL.	
	Examiner Rodney G. McDonald	Art Unit 1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 1.7.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauterbach et al. (U.S. Pat. 4,341,816) in view of Chiang et al. (U.S. Pat. 6,248,401).

Regarding claim 1, Lauterbach et al. teach a target which is composed of non-solderable metallic target materials, such as, for example, aluminum, aluminum/silicon, aluminum/tantalum, tantalum, chromium molybdenum, etc. (Column 2 lines 54-57) The target is bonded to a backing plate 4, which serves as the cooling plate. (Column 3 lines 50-53) The target is coated with a layer of adhesive material and coated with a solderable layer. The target is soldered to the surface of the cooling back plate.

Art Unit: 1753

(Column 1 lines 43-50) The adhesive layer (understood by the examiner to contain the coupling agent) can be composed of a material such as copper/glass mixtures.

(Column 2 lines 58-65) Here the glass in the layer contains silica or silicates, which is understood by the Examiner to be Applicant's required semi-metal oxide coupling agent.

(As evidence that glass is comprised of silica The Random House College Dictionary definition of glass has been provided.)

Regarding claim 4, Lauterbach et al. teach the method of making the target by applying a layer of an adhesive layer onto the target and applying the solder layer onto the adhesive layer on the target. The solder layer is reflowed to bond the target to the cooling plate. (Column 4 lines 4-16; Column 1 lines 40-50; Column 2 line 1) Once again the Examiner understands the coupling agent to be the silica of the glass mixture in the adhesion layer. This is discussed above with respect to claim 1.

The difference between Lauterbach et al. and the present claims is that the coupling agent comprising a hydrolyzable group is not discussed (Claim 1), the coupling agent comprising titanium oxide, zirconium oxide or hafnium oxide is not discussed (Claims 2, 5) and the use of a silane coupling agent is not discussed (Claims 3, 6).

Regarding the hydrolyzable group of claim 1, Chiang et al. recognizes that an adhesion promoting layer can be a variety of titanates including monoalkoxy titanate. (Column 15 lines 37-40) The alkoxy group here is a hydrolyzable group and Chiang recognizes that alkoxy groups can be hydrolyzable at Column 16 lines 2-4.

Regarding claims 2, 5, Chiang et al. teach that an adhesion promoting layer of a substrate can comprise a variety of titanates. (Column 15 lines 37-47)

Art Unit: 1753

Regarding claims 3, 6, Chiang et al. teach that an adhesion promoting layer of a substrate can comprise organofunctional silane coupling agents. (Column 15 lines 53-59) The organofunctional silane can contain a hydrolyzable alkoxy group. (Column 16 lines 2-4)

The motivation for utilizing coupling agents having a hydrolyzable group that including titanates and silane coupling agents is that it allows for enhancing the adhesion to an overlying layer of material. (Column 9 lines 34-39)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Lauterbach et al. by utilizing coupling agents having a hydrolyzable group that including titanates and silane coupling agents as taught by Chiang et al. because it allows for enhancing the adhesion to an overlying layer of material.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauterbach et al. in view of Chiang et al. as applied to claims 1-6 above, and further in view of Keller et al. (U.S. Pat. 4,476,151).

The difference not yet discussed is where indium, indium alloys, tin and tin alloys are utilized.

Keller et al. teach that a solder material of Sn/Pb can be used to join a target to a backing plate. (Column 4 lines 5-10)

The motivation for utilizing a Sn/Pb solder material is that it allows for attaching the target to the backing plate. (Column 1 lines 47-50)

Art Unit: 1753

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized a Sn/Pb solder material as taught by Keller et al. because it allows for attaching a target to the backing plate.

Response to Arguments

Applicant's arguments filed September 13, 2005 have been fully considered but they are not persuasive.

The 35 U.S.C. 112 rejections have been overcome. The 35 U.S.C. 102 (b) rejection have been overcome. The 35 U.S.C. 103 rejection remains.

In response to the argument that the field of invention for Lauterbach et al. is quite different than the field of invention for Chiang because Lauterbach et al. teach bonding inorganic materials together whereas Chiang teach bonding inorganic materials to organic materials, it is argued that since both references are concerned with establishing adhesion through an adhesion layer that Chiang et al. is applicable to suggest a bonding agent for bonding materials together and is combinable with Lauterbach et al. because Lauterbach et al. is looking to bond materials together through an adhesion layer. (See Chiang et al. and Lauterbach et al. discussed above)

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

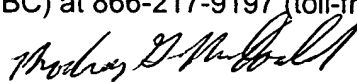
Art Unit: 1753

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M- Th with Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rodney G. McDonald
Primary Examiner
Art Unit 1753

RM
September 21, 2005